

RESERVE COPY

## PATENT SPECIFICATION

DRAWINGS ATTACHED

Inventor: JOHN DOUGLAS LINDEN DIXON

1113.988



1113.988

Date of filing Complete Specification: 1 July, 1965.

Application Date: 1 July, 1964.

No. 27112/64.

Complete Specification Published: 15 May, 1968.

© Crown Copyright 1968.

Index at acceptance:—B5 A(1R14C1C, 1R14C1X, 1R20, 1R24X, 8); B8 D(1A1, 1B1, 1F1, 7PY)

Int. Cl.:—B 65 d 1/16

## COMPLETE SPECIFICATION

## Improvements in or relating to Containers

We CHARLES TENNANT & COMPANY LIMITED, a British Company of 214 Bath Street, Glasgow, C2, Great Britain, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to containers suitable for use in holding, *inter alia*, fruits, vegetables, fruit pulp juices and any other material, solid or liquid, which do not affect the container, (hereinafter and in the claims referred to simply as "fruits").

The present practice in storing and transporting fruits is to employ wooden barrels and metal containers, but these are disadvantageous in that they have a limited useful life, they tend after a time to become unhygienic and to rot and corrode, and they are heavy so that their handling is laborious and tiresome.

It is an object of the present invention to obviate or mitigate these disadvantages.

The present invention is, therefore, a container suitable for use in holding fruits, comprising a generally cylindrical shell blow moulded of thermoplastic synthetic resinous material and free standing endwise, said shell including an upper end consisting of a central substantially cylindrical neck, a substantially frusto-conical shoulder downwardly sloped from the neck, and an annular seat extending substantially radially outwards from the outer edge of the shoulder and including a lower end consisting of an annular base extending substantially radially inwards from the shell periphery, a substantially frusto-conical wall upwardly sloped from the base to define a recess, and a substantially cylindrical housing opening upwards from the centre of the recess; the

arrangement being such that in stacking the containers the base of one rests on the seat of the other, and the shoulder and neck of one are accommodated in the bottom recess and housing of the other. 45

Preferably the thermoplastic synthetic resinous material is selected from high density polythene, polypropylene, cellulose acetate, cellulose propionate, high impact styrene, ABS, PVC, and copolymers of these materials. 50

The synthetic resinous materials employed are non-toxic. 55

An example of the method of manufacture of a container according to the present invention will now be described:—

The mould employed in producing the container is water cooled and is formed in two or more interconnected wall parts to define, generally, a space of basically upright-cylindrical shape with an externally screwed neck of lesser diameter, a sloped shoulder, a pair of axially spaced external peripheral protuberances for rolling purposes, and an upwardly domed bottom. 60 65

Molten thermoplastic synthetic resinous material for example high-density polythene, is introduced into the mould space, and air is blown in under pressure, say 80 lbs./sq.in., to force the polythene outwardly against the shaped internal wall surfaces and so form a polythene shell of said shape. The polythene under air pressure is then allowed to cool and harden, and then the mould is split to allow withdrawal of a shell which is free-standing endwise. 70 75

A plurality of such containers may be produced simultaneously in a plurality of moulds, if desired. 80

A container embodying the present invention will now be described by way of ex-

[Price

ample with reference to the accompanying drawing in which Figure 1 is a sectional side view of the container with the closure cap removed, and Figure 2 is a fragmentary sectional side view illustrating the stacking of two containers and showing the closure cap in sealing position.

Referring to the drawing:—

The container is a generally cylindrical shell 1 of blow-moulded thermoplastic synthetic resinous material and is free-standing endwise as shown. Said shell includes an upper end consisting of a central cylindrical neck 2 defining an inlet opening 3, a generally frusto-conical shoulder 4 downwardly sloped from the neck, and an annular flat seat 5 extending radially from the outer edge of the shoulder 4, and includes a lower end consisting of an annular flat base 6 extending radially inwards from the shell periphery, a generally frusto-conical wall upwardly sloped from the base 6 to define a recess 7, and a cylindrical housing 8, opening upwards from the centre of the recess 7. This construction of shell is such that in stacking the shells, the flat base 6 of one rests firmly on the flat seat 5 of the other, the shoulder and neck 4 and 2 of the bottom shell being accommodated in the bottom recess 7 and housing 8 of the top shell. The peripheral wall of the shell 1 includes a plurality of axially spaced, outwardly protruding channel-section peripheral portions 9 and 10 providing for rolling support of the shell when the latter is horizontally disposed. The neck 2 is fitted with a closure cap C which accommodates itself in the housing 7 of the superposed container on stacking the containers. The cap C consists of a closure disc 11, a depending skirt 12 surrounding the neck, internal screw threads on the skirt engaging external screw threads on the neck, as at 13, an annular ridge 14 on the disc forming with the skirt 12 an annular groove, and a resilient washer 15 which is housed in the annular groove and is compressed into sealing engagement with the top end face of the neck 2 when the cap C is screwed on to the neck. The skirt 12 terminates in a radial flange 16 apertured at 17 to permit threading of tie means through the flange and through an apertured lug (not shown) moulded on the shoulder 4, to facilitate sealing of the cap against tampering.

The container according to the present invention has an extremely long useful life, is hygienic and easily cleaned, and is lightweight for ease of handling. It is also of attractive appearance since it can be produced in a variety of colours.

The dimension of the container can be varied to suit different requirements.

If desired, a name or other identifying mark can be blow moulded on the container wall during production.

The cap can be produced in one of a number of colours for identification purposes.

The container is especially but not exclusively useful for storing and/or transporting fruit, vegetables and fruit juices, but it can also be used for storing and/or transporting chemicals (since the material from which the container is formed is resistant to corrosion) and dry, semi-dry or inert materials.

## WHAT WE CLAIM IS:—

1. A container suitable for use in holding fruits, comprising a generally cylindrical shell blow moulded of thermoplastic synthetic resinous material and free standing endwise, said shell including an upper end consisting of a central substantially cylindrical neck, a substantially frusto-conical shoulder downwardly sloped from the neck, and an annular seat extending substantially radially outwards from the outer edge of the shoulder, and including a lower end consisting of an annular base extending substantially radially inwards from the shell periphery, a substantially frusto-conical wall upwardly sloped from the base to define a recess, and a substantially cylindrical housing opening upwards from the centre of the recess; the arrangement being such that in stacking the containers the base of one rests on the seat of the other, and the shoulder and neck of one are accommodated in the bottom recess and housing of the other.

2. A container as claimed in claim 1, wherein the neck is fitted with a closure cap comprising a skirted disc engageable over the neck and capable of entering said bottom housing, internal screw threads on the skirt co-operable with external screw threads on the neck, an annular ridge on the under face of the disc defining with the skirt an annular groove, and a resilient washer located in the groove and co-operable with the end face of the neck to seal the opening.

3. A container as claimed in claim 2, wherein the skirt terminates in a radial, apertured flange, the aperture permitting threading of tie means through the flange and through an apertured lug on the adjacent shoulder to facilitate sealing of the cap against tampering.

4. A container as claimed in any one of claim 1 to 3, wherein the shell's peripheral wall includes a plurality of axially spaced outwardly protruding channel-section peripheral portions providing for rolling support of the shell when the latter is horizontally disposed.

5. A container as claimed in any one of the preceding claims, wherein the thermoplastic synthetic resinous material is selected from high density polythene, polypropylene, cellulose acetate, cellulose propionate, high impact styrene, A.B.S., P.V.C., and copolymers of these materials.



# BEST AVAILABLE COPY

1,113,988

3

6. A container suitable for use in holding fruits, substantially as hereinbefore described with reference to the accompanying drawing.
- 5 7. A method of manufacture of the container claimed in any one of the preceding claims, substantially as hereinbefore described.

H. D. FITZPATRICK & CO.,  
Chartered Patent Agents,  
5 Park Gardens, Glasgow C3.  
and  
27 Chancery Lane, London W.C.2.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1968.  
Published by the Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained.